

Appln. No. 09/821,723  
Attorney Docket No.: 2001A002  
Amendment in Response to February 10, 2006 Office Action

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### REMARKS/ARGUMENTS

#### Claim Amendments

By the claim amendments presented, Claims 1-47, 55, and 61-122 have been cancelled. Such claim cancellation is carried out without prejudice to applicants' right to pursue these canceled claims via one or more continuing applications.

Also by the claim amendments presented, Claim 48 is rewritten to indicate that the particulate reacted precursor electrocatalyst is deposited on a substrate. Support for this amendment of Claim 48 is found in original Claim 55.

Upon entry of the amendments presented, Claims 48-54 and 56-60 remain in this application. No additional claims fee is due as a result of these amendments.

#### Invention Synopsis

The present invention as currently claimed in this application is directed to a method for the continuous fabrication of a plurality of electrocatalyst compositions. The first step in such a method comprises providing an electrocatalyst composition precursor which comprises at least first and second precursor components. These precursor components are dispersed into precursor droplets which are reacted in a carrier gas to form the particulate reacted precursor. The particulate reacted precursor material is collected by depositing it onto a substrate, preferably continuously and in the form of a linear feature. During the providing step, the precursor composition is controllably changed such that the reacted precursor material comprises at least a first electrocatalyst composition at a first time and a second electrocatalyst composition at a second time. In a preferred embodiment wherein the reacted precursor material is deposited in the form of a linear feature, this controlled changing of the precursor composition results in the formation of compositional gradient in the linear feature of electrocatalyst material which is continuously deposited onto the substrate.

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### **Art Rejections**

A number of the claims pending in the application after RCE have been rejected under 35 USC §102(e) as allegedly being directly anticipated by Bi et al (U.S. Published Application No. 2005/0158690, hereinafter "Bi"). Different sets of claims have also been rejected under 35 USC §103(a) as allegedly being unpatentably obvious over Bi in view of Schultz et al (U.S. Patent 5,985,356, hereinafter "Schultz") and Bi in view of Gupta et al (U.S. Patent No. 6,620,351, hereinafter "Gupta"). All of the claims rejected as directly anticipated by Bi or as unpatentably obvious over Bi in view of Schultz or Gupta have now been cancelled herein. Such claim cancellation thus obviates all of these art rejections.

Presently pending Claims 48-54 and 56-60 are among the claims which have been rejected over Bi alone as allegedly being unpatentably obvious under 35 USC §103(a). The Examiner contends that features in these claims not specifically disclosed in Bi would have been obvious to the skilled artisan in light of the general disclosure and teaching of Bi. Such a rejection is respectfully traversed as it would apply to the amended claims remaining in the application.

Bi discloses combinatorial synthesis methods wherein a plurality of compositions having different characteristics are produced within a vapor in a reactor apparatus. A first quantity of a first composition is formed within the reactor and collected. Thereafter, a second quantity of a second materially different composition is then formed within the reactor and collected. A plurality of such differing compositions can be produced in the same way and collected via a plurality of collectors. These collectors are positioned to receive the varying compositions via a nozzle from the reactor apparatus. The separate compositions which are collected can then be evaluated to determine their suitability for various applications. There is no disclosure in Bi of the preparation, collection, variation and testing of electrocatalyst compositions. There is furthermore no disclosure in Bi of the deposition of particulate compositions onto a substrate or formation of the varying compositions of any type into a linear feature with the resulting linear feature having a compositional gradient therein.

Appln. No. 09/821,723  
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The Examiner has acknowledged that Bi fails to teach the preparation of electrocatalyst compositions. The Examiner nevertheless urges that the materials and categories of materials disclosed in Paragraph 0045 of Bi would suggest preparation of such electrocatalysts. It is submitted, however, that the very general disclosure in Bi of the categories of particle types as including metals, metalloids, and non-metals such as carbon would not suggest the specific materials and combinations of materials used to form the electrocatalyst compositions as set forth in certain of applicants' rejected claims. Furthermore, the Bi disclosure of the preparation of compositions for use in electronics fabrication, surface polishing and coatings cannot properly be said to suggest preparation of applicants' electrocatalyst materials. Compositions such as are disclosed in Bi are neither suitable as nor analogous to electrocatalysts.

It is also submitted that there is nothing in the Bi disclosure of the manner and means for collecting the compositions which Bi produces that would suggest applicants' deposition of particulate compositions onto a substrate as now set forth in all of applicants' amended claims (or in a linear feature having a compositional gradient as set forth in applicants' present Claim 56). The Bi compositions are collected as discrete compositions in "collectors" which are variously characterized in Bi as "containers", "cups" or "reservoirs". It is submitted that such disclosure of the various useful types of collectors in Bi is not a teaching or suggestion of deposition of particulate compositions on a substrate as in applicants' presently claimed invention.

Furthermore, there is certainly no suggestion in Bi to deposit the Bi compositions onto a substrate in linear form as set forth in applicants' presently pending Claim 56. And the varied Bi compositions separately passed into each Bi collector are presumably of uniform composition and would therefore have no compositional gradient within any such composition as required in the preferred Claim 56 embodiment of applicants' invention. The Examiner's indication that the skilled artisan could easily configure the Bi movable nozzles and collectors in such a way as to result in a linear shaped product is a conclusion which applicants submit is one improperly reached in hindsight based on applicants' own disclosure of this preferred form of composition preparation.

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Given the foregoing considerations, it is submitted that the claims which remain in the present application comprise invention features which are neither taught nor suggested by the Bi reference. Accordingly, continued rejection of these Claims 48-54 and 56-60 under 35 USC §103(a) over Bi would be improper.

#### **Provisional Double Patenting Rejection**

A number of claims pending in the application after RCE have also been provisionally rejected for obviousness-type double patenting in view of the claims of the commonly assigned, co-pending U.S. application having Serial No. 09/821,848. Again all of the claims subjected to this provisional obviousness-type double patenting rejection have been cancelled herein without prejudice. Such claim cancellation thus obviates this double patenting rejection.

#### **CONCLUSIONS**

Applicants have made an earnest effort to place their application in proper form and to distinguish their invention as now claimed from the applied prior art. WHEREFORE, entry of the amendments presented herein, consideration of Applicants' remarks concerning the art rejection, withdrawal of the art and double patenting rejections, as well as allowance of Claims 48-54 and 56-60, are all respectfully requested.

Any comments or questions concerning the application can be directed to the undersigned at the telephone number given below

Respectfully submitted,

Date:

August 9, 2006



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